

REMARKS

The Applicant appreciates the courteous and complete examination of the application by the Examiner. In view of the foregoing amendments and the following remarks, a reconsideration of the instant application is respectfully requested.

The Examiner rejects claims 31 and 32 under 35 USC § 112, claims 1-4 and 6-8 under 35 USC § 102(e) as being anticipated by Kessel, claim 5 under 35 USC § 102(e) or under 35 USC § 103(a), and claims 9-16 and 22-30 under 35 USC § 103(a) as being unpatentable over Rawley in view of Kessel.

In order to expedite the prosecution of this application, claims 1, 7, and 8 have been amended, and claims 2-6 and 9-33 have been canceled without prejudice or disclaimer of the subject matter thereof, thereby responding to all the Examiner's rejections.

REMARKS TO EXAMINER'S REJECTIONS

The Applicant appreciates the opportunity to make remarks to the Examiner pertaining to the references relied upon in this rejection.

The Applicant amends independent claim 1 to incorporate limitations from cancelled claims and from the specification. The Applicant admits that an integral part of the present invention is the permanent attachment or bonding of the foam layer to the base portion, and the plastic layer to the foam layer. This permanent bonding of the foam and plastic layers at the point of manufacture essentially produces a complete and single component or unit. One would destroy the layers if they tried to remove or detach them. This permanent bonding is different than that disclosed in the Kessler reference which glues the layers together. Additionally, the foam and plastic bonded layers are permanently bonding to the base layer, thereby making single and complete unit. As mentioned above, the present invention would be destroyed or rendered unusable if the layers were to be removed from the base portion.

The adhesively backed sandpaper layer is not part of the present invention, but merely used with it. The Kessler reference discloses a polishing pad that is substantially different than an adhesively backed sandpaper layer used in conjunction with the present invention in amended claim 1. The sandpaper is made from a layer of

fabric or paper backing, having resin glue applied to the grit side of the backing paper, whereby grit or aggregate is sprinkled or electrostatically attached to the backing paper. The grit is laid onto the backing paper in a single continuous layer, having gaps between the individual pieces of grit to allow dust from the material being sanded to pass between the grits and fall away from the grit surface of the sandpaper to prevent the sandpaper clogging. This is in comparison to the top polishing layers of the Kessler invention in the Kessler Figs. 1-6. The removable top polishing layers as shown in layer (31) in Figs. 1 and 2 of the Kessler reference, layer (41) in Fig 4 of the Kessler reference, layer (104) in Fig 5 of the Kessler reference, and layer (204) in Fig 5 of the Kessler reference. These top polishing layers in the Kessler invention are constructed of a base layer material such as foam etc, having a permanently bonded layer of aggregate held together by a binding slurry or agent. The polishing layer of the Kessler reference is not a single layer like sandpaper which has well spaced coarse grit particles held in place on a paper or cloth backing for with a purpose of scouring and scratching a surface to provide a scratched surface that coatings can stick and adhere to. The Kessler polishing layer is in fact a mass of ultra fine polishing aggregate stacked up either in precise and evenly shaped tall tooth like structures, shown as (32) in Fig. 1, (42) in Fig. 2, (105) in Fig. 5, and (205) in Fig. 6, or in a continuous stacked up mass of ultra-fine polishing aggregate as shown as (32) in Fig. 2. The purpose of the stacked up ultra fine polishing aggregate is to provide polishers of semiconductor wafers with a long lasting polishing surface pad, so that as the surface aggregate wears away, it exposes the polishing aggregate below until at last all the polishing aggregate is worn away, and at that time, the old worn out polishing pad layer is removed from the sub layer(s), and a new top polishing layer is stuck or attached to the sub layer(s).

Hence, the claimed present invention is adapted to be used with a layer of adhesively backed sandpaper, which is substantially different than the abrasive material used in, and part of, the Kessler reference. The sandpaper having a single layer of grit bonded with suitable gapping between the grits to allow dust and worn particles from the surface being sanded to fall away from the sandpaper and prevent clogging of the sandpaper. When the single grit layer is worn which occurs very quickly, it is removed and replaced with new sandpaper.

It has been proven above that the top polishing layer of aggregate and binder on a base layer in the Kessler reference is an integral component, is part of the Kessler invention, that the ultra-fine polishing aggregate is permanently bonded to the polishing base layer and the aggregate is stacked high and held together by a slurry type binding agent creating an thick high mass of polishing aggregate held together to produce a long lasting polishing pad. This polishing pad is substantially difference to adhesively backed sandpaper, and is for polishing, not sanding and roughing as sandpaper is. Construction of the Kessler polishing pad is entirely different, and the materials used to create and produce sandpaper and this Kessler polishing pad are entirely different in construction from each other. The fact is, a semiconductor wafer is very small, very thin, ultra fragile, and almost microscopic in finished form and often around the size of a small human freckle. The aggregate used on the Kessler polishing pads is made from microscopic particles of diamond like dust and is so fine it must be viewed with a powerful microscope. Semiconductor wafer are ultra thin, fragile silicon sheets that if contacted anything other than microscopic aggregate particles would destruct immediately. As stated, the Kessler polishing pad is for polishing to an ultra smooth surface, whereas sandpaper is for roughening up surfaces and an entirely different function, and made in an entirely different way to each other. The massed and bound polishing aggregate in the Kessler reference is made much and massed together much in the same manner as a grinding stone is created with ultra fine particles bound together to form a thick long lasting consumable polishing wheel, block, or device. The difference between the grinding stone, wheel, or device and the Kessler polishing device is that the massed aggregate of the Kessler invention is massed and permanently bonded onto a sub-layer that can have adhesive applied to it to allow it to stick to the pad layers beneath, and that the binder holding the microscopic aggregate particles together would need to be a more gentle and infinitely smoother binding agent than used in a grinding wheels or grinding polishing stones.

Additionally, the present invention of amended claim 1 is not for use with large heavy permanently mounted stationary machinery and platens, polishing pads and semiconductor wafer, but is a portable, hand held, lightweight, moulded tool having a permanently bonded, non removable layer of foam an film layer are bonded laminated

together and made one, not by glue or adhesive, but by bringing these two component materials together at great heat, while in a semi molten state to make the two materials physically bond together and become as one. The sandpaper that attaches to the present invention is not part of the present invention as the polishing pad is an integral part of the Kessler invention. The Kessler polishing pad surface is unique to the Kessler invention and the Kessler polishing pad is in no way similar to sandpaper.

The Kessler invention is not a tool, but is a multi layer pad. It has no solid base or construction that is an integral part of the tool as compared to the present invention which has a solid moulded base with permanently bonded foam and film layers. The base or platen of the Kessler invention attaches to a pre-existed unit, which is not or a part of the Kessler invention. It is believed that the Kessler invention is merely a disposable multi layered pad element that attaches to a pre-existing polishing machine and pad. It is also believed that the Kessler invention is only used for polishing smooth, not sanding to roughen, the fragile surface of a silicon semiconductor wafer, and has no other use or purpose outside of this function because polishing semiconductor wafers is highly specialized. This use is not related to polishing of other materials or functions due to the fragile nature of small size of the silicon semiconductor.

Most importantly, the base pad of the Kessler invention, that the top polishing pad of the Kessler invention adheres to, is multi layered using pressure sensitive adhesive and whereby the various layers are made to be releasably attachable and detachable from each other to create a pad to the desired height required, whereas the foam layer of the claimed present invention is permanently adhered to the solid construction base portion, and the plastic layer is permanently bonded to the foam layer, which is no releasable, not detachable, and would render the tool broken and unusable if the foam/film layer was damaged or removed from the tool.

REMARKS TO THE NEWLY ADDED CLAIMS

Claim 34-61 have been added to more completely cover certain aspects of the Applicant's invention.

The Applicant appreciates the fact that the Examiner has located patents directed to abrasive tools having structure similar to the present invention. In this

respect, independent claims 34, 48, and 58 have substantial structural differences to the Kessel and Rawley references which the Examiner relies upon for his rejection of the claims. The Kessel and Rawley references do not disclose or teach the structural limitations of the claimed present invention.

The Applicant would like to call the Examiner's attention to the following point.

The Examiner states in paragraph 17 of the office action that the Rawley reference discloses "a screw member (22) passing through a respective end of the handle portion (20) and received within a socket (portion 20 of the handle comprises a socket that receives the screw member) pivotably connected to a respective end of the flexible portion." The Examiner may be in error in the understanding of the Rawley reference, in that according to Fig.'s 1-3 in the Rawley reference it can clearly be seen that the screw member (22) does not pass through the handle portion (20), but instead is threaded into the handle portion (20) thereby making the handle portion (20) into a "turn-buckle". Hence the handle portion "turn-buckle" (20) in the Rawley reference rotates.

Claim 34 of the present application is substantially different in structure to Rawley reference in that it claims "at least one adjustment means passing through an end of said handle portion" and "a flexible base portion removably attachable to said handle portion about a central pivot line". Consequently, the claimed handle portion can not rotate since it is attachable to the flexible base portion, and since the adjustment means passes through an end of the handle portion. The handle portion in claim 34 is not a rotating turn-buckle as disclosed in the Rawley reference.

Additionally, the socket (portion 20) in the Rawley reference is part of the handle portion (20), as admitted by the Examiner. The claimed invention in the present application has the "socket pivotably connected to said respective end of said flexible base portion". Hence the socket is not part of the handle portion (20), as disclosed in the Rawley reference, instead it is pivotably connected as a separate and independent element to the end of the flexible base portion.

Furthermore, the Examiner states in paragraph 18 of the office action "that each socket is pivotable (via, the screw member, as discussed supra) about a rod (24) fixed within an end (14) of the flexible base portion". Again, the Examiner may be in error in

using this specific reference in that the rod (24) is not "fixed within an end (14)". The rod (24), as disclosed in the Rawley reference, is in fact a "transverse pin 24 mounted on the legs 14 of the end brackets 12 adjacent the upper ends thereof." Therefore the rod (24) in the Rawley reference is not fixed within the end of the flexible base portion, as claimed in the present application. This can more easily be seen in Fig.'s 1-3 of the Rawley reference.

In this regard, the Applicant would point out that there is no teaching in the Rawley and Kessel references or that it would have been obvious to one skilled in the art to use the claimed structure combination in claims 34, 48, and 58 of the present application. The Applicant's claimed invention is now believed to be patentably distinct to the references relied upon by the Examiner.

Consequently, claims 34, 48, and 58 of the present application are believed not to be considered anticipated or unpatentable by Rawley and Kessel, and therefore a request for withdrawal of the Examiner's rejection is respectfully submitted.

Proceeding from the above, it may be considered that the claims 35-47, as being dependent claims to claim 34, claims 49-57 as being dependent claims to claim 48, and claims 59-61 as being dependent claims to claim 58, also believed not to be considered unpatentable.

The Applicant requests that the Examiner reconsiders his rejections of the invention in view of the well established principle that small differences in a crowded art can constitute patentable improvement. See *In re Baum*, 51 USPQ 470 (CCPA 1941) and *In re Lange*, 126 USPQ 365 (CCPA 1960). In considering this principle, the Applicant would also request that the Examiner take note to the court decision which notes that "apparent simplicity has been held to furnish strong argument for patentability where, as here, a need has existed for a structure of the nature disclosed and claimed. The fact that a solution to a problem is simple, or appears to be simple when viewed in retrospect, does not mean that the solution was obvious when it was conceived." See *Ellipse corp. v. Ford Motor Co.*, 171 USPQ 513.

With the above amendments being fully responsive to all outstanding rejections and formal requirements, it is respectfully submitted that the claims are now in condition for allowance, and a notice to that effect is earnestly solicited. Should the Examiner feel

that there are further issues which might be resolved by means of telephone interview, the Examiner is cordially invited to telephone the undersigned at (403) 444-5695, or by email at davidguerra@verizon.net.

No additional fee is due.

Respectfully Submitted,



David A. Guerra, Reg. 46,443

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